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## The Internal Audit of a Public Utility Company

By M. T. BANCROFT

*Shawinigan Water and Power Company, Montreal*

(An address before the Montreal Chapter, December 10, 1926)

I FEEL very much honored by the request of your Association to give an address on the internal audit of public utilities. This is work in which I have been engaged for some years and I am naturally very much interested in it. I hope that the paper which I have prepared will be of interest to you, and that I will be able to point out—firstly, what the Internal Audit Department of a Public Utility is,—secondly, the reasons why it is considered necessary,—thirdly, how the work is carried out,—and lastly, the benefits which can be derived from it.

First, I will endeavor to explain the scope of an Internal Audit Department.

### Description

It is just what the name implies. It is a system of internal inspections carried on by a company itself under the guidance of its executive officers. It might be carried on by one man called by the more familiar name of travelling auditor, or it might be developed into a department, the size of which would depend on the scope of the work called for and the size of the company in which it is working. Its size also depends on the condition or structure of the company and the capabilities of the head of such a department. The Internal Auditor creates his own position. On himself depends his success.

Anyone who has ever been connected with a Canadian bank will remember the Bank Inspectors,—their unannounced arrival and the inspection which followed. Our Internal Audit is in theory built on the same principle and has had the same moral effect on our staff.

An excellent opportunity for this work is in a company such as our own which is largely built up of subsidiary companies calling for a large number of outside offices, stores and other departments. In our case, the companies and

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departments are under the control of one group of executive officers.

The general idea of a travelling or internal auditor is a mistaken one. It is generally considered that he is a person who goes about finding fault and laying down the law as to what should be and what should not be. In reality, the Internal Auditor and his department are a part of the company in which they work and should endeavor to assist and to be as constructive as possible.

It is quite easy for the Internal Auditor to become the most detested man in the organization, when everyone will make it difficult for him to accomplish anything, or with equal ease he may acquire the name of being "not such a bad fellow." Being a link between the staff and the executive, is a very difficult position for an auditor to occupy, and it is essential that he be careful not to be small or petty in his dealings or criticisms.

It is also necessary that the Internal Auditor have a thorough knowledge of his company and its systems. He should be able to put himself always in the other men's positions and be able to look at things from their point of view as well as from his own. He should make a study of conditions existing in different parts of his company so that he may be able to offer constructive suggestions or criticisms.

Our company is very scattered and it calls for a special department to cover the Internal Audit work. This department has a staff of fourteen, divided into three classes—those employed in office inspections,—those employed in taking inventories,—and those employed in electrical inspections. In building up this department, our scope has not been limited in any way, and we have the privilege of going about checking up anything which we deem necessary. We also have the privilege of putting forward any suggestions where we think matters could be improved upon.

We have a set outline of work which we keep up, but we are not limited to it. Our office inspections are carried out every three to four months. Complete physical inventories are taken yearly, and the inventory staff have the privilege of dropping in unannounced at any time. On other visits, test checks are also made of matters which were found to be out of order at inventory time. These are checked up and we satisfy ourselves that they are in order.

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Electrical inspectors travel from company to company and from town to town, without notice, checking up installations and verifying meter readings.

From experience in this work, I might state that it is not advisable to give the Internal Auditor authority to settle matters as he sees fit. My reason in saying this is that if he finds it necessary to criticise or make changes, that criticism has more effect coming direct from the executive than it has coming from him. The executive have the authority to issue instructions, and will not be questioned, while the Internal Auditor has not, and his criticisms or instructions frequently become a cause of ill-feeling and very often give rise to appeals to the executive, and to arguments, etc. In the ordinary course of work, small things and little mistakes can be taken up with the head of the office by way of suggestion, and if done in the right manner, the suggestions are usually accepted. It must always be remembered that the man doing the work usually considers his way the best, and is not anxious to admit that he is doing it in the wrong way.

### Necessity

One of the necessities of having such a department is for the moral effect that is derived from it. In a scattered company, a series of inspections tends to raise the standard of efficiency very much. It is a means of keeping records and other matters up to date. There is always a thought in the minds of staff who are subject to inspection that they never know when the inspectors are going to drop in on them.

The Internal Audit is also a link between the executive and outside details. It is the executive's way of keeping in touch with, and being informed of, conditions throughout their company. It is a safeguard against unnecessary discrepancies or dishonesty.

It is a means of standardization in accounting systems, forms and other routine.

Where the executive are dealing with a number of companies, this is especially beneficial, inasmuch that the executive know how figures submitted from various companies are made up. They do not have to stop and think that one company compiles its figures in one way while another company compiles them altogether differently. They know

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that in each case the figures have been compiled in exactly the same way.

Unless an internal audit is in force, it is very difficult to standardize, or having standardized, to keep forms and systems from changing.

An internal audit is also a ways and means of cutting down unnecessary work while still insuring that records are intact and sufficiently supported.

It is easier for an outsider who is familiar with an office to come in and see ways and means of cutting down work than it is for those who are actually engaged on the work, and have possibly become too familiar with their own way of carrying on.

There are certain phases of the work which can be reached by the internal audit which can not be reached by the outside auditors. By this, I mean such items as Stores inventories and physical verification of a distributing company's revenue. These two items alone make up a considerable part of the internal audit.

In some cases arrangements can be made with outside auditors so that a certain amount of detail is carried out for them and certificates issued by the Internal Auditor, the auditors reserving the right to test check and satisfy themselves over and above the certificates rendered.

### Procedure

To give an idea of the working of an internal audit department, I will outline our procedure.

The staff of the internal audit department report direct to the Internal Auditor. Reports are gone over and followed up as much as possible. They are then condensed and reported by the Internal Auditor himself direct to the executive.

The Internal Auditor's reports are filed in a binder and are delivered by him direct to the Secretary or Treasurer. These binders are treated as strictly confidential and memos on matters taken by these officers from the report are written in their own name.

Our work is not a detailed audit. It is more of an inspection.

Our endeavors are aimed principally at Control Accounts, Suspense Accounts, Deferred Charges and items of

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this nature and we try to assure ourselves that the details controlled are in order.

We also endeavor to check up any matters which the Accounting Department have no means of controlling.

To illustrate what I mean, take for instance the handling of scrap or of inactive material which is a problem all public utilities must face. This is something that is very difficult to compute or to verify. We try, however, to see that protection is given by using proper resale orders, and that all sales are authorized. Where the proper procedure is not observed, we usually discover the fact through the inventory work.

### Office Routine

Upon first entering an office, we always make it a point to check all Cash Accounts, Cashier's or Trust Funds. This is not only done at the time of our inspection, but we are in the habit of periodically dropping in and checking them up at other times.

In checking a Cash Account, we make a statement of its exact condition at the time of taking it over. We see that proper receipts are on hand for expenditures, that advances have not been made to members of the staff and if the advance is sufficient or over-sufficient for its purpose.

In checking the Cashier, we first of all endeavor to satisfy ourselves that his or her moneys are correct. In our company, cashiers are handling cash from revenue. We endeavor to satisfy ourselves that his or her records are complete and that moneys are not being held over and used for other purposes.

Our next step is to inspect the general cash book of the company, to make sure that it is in reconciliation with the various bank balances. Our reconciliation is made out in statement form and all outstanding cheques beyond a certain period are reported on to be followed up or written off into an unclaimed cheque account. We see that the general cash book of a company is always kept up to date and that sufficient particulars are recorded in it.

Next, the general ledger is obtained and checked off against the last monthly statement rendered. The statement is then proved in order to find out if the general books are in balance. We also take care to see that all accounts in the general ledger are properly represented.

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Taking our balance sheet as a guide, we follow up all items shown on it as far as possible and the systems used in building up the accounts.

Control Accounts are one item which receive our particular attention.

The last Accounts Payable list is verified and old items are listed and followed up.

Twice a year we balance all Accounts Receivable Ledgers. On each inspection, however, we make a follow-up list of collections in arrears, classifying them under their various headings.

In going through the Accounts Receivable, we satisfy ourselves that all systems employed are efficient. We investigate the system used in handling customers' accounts to see that proper record is kept of meters and that a follow-up system is employed in keeping track of changes in customers' accounts.

This chiefly applies to what is known as Consumers' Ledgers. In our company, we are at present handling over 60,000 accounts for domestic users of electricity. With so many accounts it is necessary that there should be a proper follow-up system so that the loop holes for error will be reduced to the minimum.

We always make it a point to visit Stores. This visit being chiefly for the moral effect, is only a visual survey of conditions and a check to see that Stores records are up to date. We test check to see that material is released on proper approvals and that as far as possible the general instructions are carried out.

In most of our distributing companies, we carry on a retail appliance store and showroom. This is to promote the use of electrical appliances and to protect the customer against the sale of inferior merchandise. The internal audit department also visit these merchandise stores.

We make a test check of sales slips to see that proper prices are being used, investigate the method of costing these sales and the method of billing customers.

We take the payrolls and see that a proper receipt or cancelled cheque is on hand for each disbursement. We test check in detail about six payrolls a year, checking right through from the original time sheets to the receipts. We see that time sheets or cards are properly approved by

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authorized parties and that the system in effect is sufficient for the company's protection.

All other books used throughout the office are inspected for condition.

While working in an office, we pay particular attention to the staff and before leaving we obtain a complete list of all members and their duties. We endeavor to see that an office is not over or under staffed, and that it is up to the necessary standard of efficiency. Later, our list of staff is checked to see that sufficient Fidelity Bonds are in force.

We report on the conditions we find existing in the office as to its appearance, files, procedure and condition.

It is one of our duties to see that all Suspense Accounts or Deferred Accounts are being taken care of and that they are not buried in the Company's balance sheet. Where a new Suspense Account appears, we obtain an explanation as to why it was necessary to create it.

We make it a point to go over all work orders for capital expenditures to see that the authorized expenditure is not exceeded.

This outline of our usual routine does not cover all our work. We are privileged to investigate Purchasing Department systems, systems used in handling or filing coupons and all other matters of this nature.

In manufacturing companies, we watch to see that all repair work orders shown in the work's ledger are being taken care of and are not being held over. As in other offices we check any Cash Accounts, Control Accounts, or Deferred Charges.

Our department is also responsible for seeing that proper systems and protections are in use in large construction jobs. On jobs of this nature, there are generally in use fairly substantial sums of money as Cash or Trust Accounts. These are kept checked up in the same manner as other accounts of this nature.

Payrolls are audited in exactly the same manner and periodic checks are made in detail in order to check the systems in use and their correctness.

A study is made of time-keeping systems employed for payrolls and our department makes periodic test checks of the men on the job to see that the timekeeper's reports are correct. Besides our periodic checks, we also keep in touch



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with the timekeeper to see his method of checking up the men.

At intervals we take a group of vouchered invoices and check them through the records of the job office to see that proper requisitions are being issued, that orders are on hand covering them, that material reports are in the office showing that the material has been checked on its arrival. The invoices are also checked into the invoice records to see that they are being properly recorded as a safeguard against duplication. If our test check proves that the work is being properly carried out, we are satisfied. If we bring to light inaccuracies or carelessness, a more extensive audit is called for.

Stores on construction work are a very much more difficult problem as material is generally delivered to the point at which it is going to be used, and only very small articles are kept in a proper storeroom. It is our duty, however, to satisfy ourselves that as much protection as possible is afforded this material and that the accounting records are keeping track of it.

In most of our construction work, a number of cars and trucks are employed. We endeavor to see that there is a proper accounting system for these—not only of the individual cars, but of the accessories, stores, gasoline, oil, etc.

We see that the job costs are up to date as far as possible and that they are in reconciliation with the control which in reality is the total disbursements.

Here, again, on construction jobs our work is not limited and we are at liberty to go about the job and check up in any manner which we consider advisable.

### Inventories

The second part of our work is the inventories. These consist of an actual physical count of all Stores, and of what is generally termed loose plant which includes tools, instruments, furniture and automobiles.

This work is carried out by experienced Stores men who have a thorough knowledge of our Stores system. I mentioned that in our office inspections we make it a practice to go into the Stores systems and procedures. The men employed on inventory work also do this. In this manner, we get two different opinions—one from the Accountant's point of view and the other from the practical storeman's

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viewpoint. In the study of the Stores system, we try to insure proper protection for the Stores and for the care of materials.

In taking an inventory, our men walk into a Store without warning. Our system is so arranged that an inventory can be taken on any day of the month. On entering the Store, it is the duty of the inventory staff to see that records are up to date, that releases are properly authorized and are covered by orders.

After investigating the conditions of the Stores' records an actual count is commenced of all material stored in the storehouse.

The inventory is, as I have said, an actual count of everything which is in the Store. The count is marked on the bin card and is stamped with our departmental stamp. No guide is used in making this count.

If material appears to be in the Store without proper bin cards, a card is filled out and put on the material as it is checked. The bin cards at the completion of the count or during it, according to the size of the store, are removed and checked against the stock record.

When we have completed checking the bin cards to the ledger, we have left on each individual sheet our stamp together with the quantities actually found, and a note is made at the same time of any overages or shortages. Any material found in the store which is not shown in the ledgers is listed on a separate sheet and attached to the inventory. The inventory is then typed from the stock ledger.

When the inventory is completed and added, we have the actual count of material on hand at the date the inventory was taken. This is never interfered with in reconciling the inventory.

Material that shows in the stock record to be inactive is marked in the same column of the inventory and the time of its inactivity is designated by stars. For instance, material that has not moved for one year is marked with one star—two years, two stars and so forth. We also mark any obsolete or broken articles for the head of the Stores' Department to follow up.

The inventory staff turn in their inventory, and hand me their report giving all the information which I desire about the Store in question.

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A report is then turned in to the executive giving the inventory value, together with the corrected book value and the differences which we find. Theoretically speaking, overages and shortages shown by our inventory should equal the difference between the value of the material and the general books.

Our experience in this inventory work shows that here again we exert a very marked moral effect among the Storekeepers.

### Electrical Inspection

The last part of the internal audit is the electrical inspections. This is probably one of the most important parts of the Internal Audit Department work. It is at least the most remunerative. It is one part of our work the benefits of which we can figure in dollars and cents.

The electrical inspection is a survey of a distribution system. In this work are employed experienced electricians familiar with wiring and with the underwriters' regulations.

In starting to make this survey or inspection of a town, these men start without any guide whatsoever. The distribution lines are followed to transformers and all leads from transformers are followed up. Loops taken from the lines are followed into the buildings and an inspection is made of the installation of each user of electricity.

A record is compiled from the information thus obtained, and we have therefore a record of the demand in effect in this locality and the names and addresses of the people creating it.

This record on completion is checked against the Accounting Department record of customers. In checking this, we see that the ledgers in the Accounting Department bear the correct name and address of customers. We identify each meter in use, and check the meter record to see that it is complete. The record also gives us an idea as to the condition of the wiring and installations in the locality. If anything regarding an installation is out of order, the fact is marked on the slip. We also see that the meter reader is turning into the Accounting Department the correct consumption shown by the meter.

Any deficiencies in the installations or in the line work shown by the inspection slips are entered on a follow-up form called the inspector's report.

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In the event of customers tapping the company's service ahead of meters, a notation is made on the inspection slip and a sketch is shown on the back of it, giving us a clear idea as to what the tap is used for. From this we can generally tell if it is a direct steal or an unintentional error.

Taps are followed up and a settlement is usually reached with the customer. It has not been the policy of our company to make money out of such cases. We feel sure, however, that if no punishment is inflicted the customer will retap at the first possible opportunity. We therefore try to obtain a settlement from him on what we consider he would have actually used, and explain to him the seriousness of his offence. However, in districts where tapping is very prevalent, we are forced to use stronger methods, and when necessity arises to take action as an example to other people of the locality.

On completing a small town or district, the follow-up report which I have shown to you is distributed to the interested parties to be followed up. At the same time we recap our reports.

Such matters as illegal connections, unrecorded customers, under-billing or other items of this nature are taken off the reports and tabulated on an index visible record to be followed up at a later date. The cards in this record are from time to time rechecked, and when we know that a card is satisfactorily completed, it is removed from the current file and filed alphabetically. This constitutes a record of all discrepancies found on previous inspections and is a guide to future ones.

This work of electrical inspections, as I said before, is the most remunerative part of our work as you can see by the number of customers which distributing companies carry. You can understand how very easy it is for matters to be missed or for errors to occur in the office. We also find a fairly large number of dishonest cases where people are literally stealing from us.

Our experience on this electrical inspection work shows us that we practically clear our total expenses in this connection through collections made on illegals, even though we do not endeavor to collect as much as we might. Leakages in revenue which we are able to stop constitute an increase in revenue which we benefit by indefinitely.

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Here, again, the moral effect of these inspections plays a very important part. In the first place, the operation men who are making the customers' connections know that the inspectors may, at any time, check up the town in which they are working. It is our safeguard against connections being made that are not reported. We assure ourselves that the Accounting Department in each instance has full control of all connections and disconnections.

We have a check of meter readers and we assure ourselves that they are doing their work correctly and not making up their meter books by average readings on a park bench.

### Benefits

I have endeavored to explain to you what an internal audit department is, and to give you an outline on the procedure which we follow in our work. I hope that I have been able to show you some of the benefits which can be derived from it. However, in closing this paper, I might make a short resume of the benefits which we in our company have received from it.

We have certainly noticed the marked moral effect that this work has had. I think I can say that our efficiency has been much increased by rigid inspections.

It has put the executive officers of the company much more in touch with the conditions existing in outside departments and offices, and has enabled them better to judge what parts of our company need attention.

It has put the executive more in touch with the office managers and department heads who are away from the Head Offices, and has given them a better knowledge of the capabilities of these men due to conditions that have been pointed out to them.

There have been fewer discrepancies or cases of dishonesty throughout the system.

We have been able to standardize our various offices, thereby cutting down a certain amount of expense and giving those in the Head Office a more definite idea of how statements and statistics are compiled.

We have been able to assure the heads of the companies that as far as possible we are obtaining full revenue throughout our distributing companies.

We have been able to tie in to a certain extent the internal audit department work with the work done by our

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chartered accountants, thereby doubly assuring ourselves of proper protection, and at the same time being able to satisfy the auditors on certain branches of the work which they are unable to get at.

Stores are an important part of a public utilities organization. We have found that through a rigid series of inspections and inventories, we have very materially increased the efficiency of our stores-keepers. Not only have we been able to put our stores on a better working basis both from material and record points of view, but have been able substantially to cut down the amount of material carried.

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# A Synopsis of the Operations of a Manufacturing Company

By D. M. FARISH

*Northern Electric Company, Ltd, Montreal*

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(An address before the Montreal Chapter, December 12, 1924)

**A** MANUFACTURING company may be divided into three main functions:—

1. Manufacturing.
2. Selling and Distributing.
3. General Administration.

In presenting this paper we are presumed to be dealing with a going concern which has the necessary facilities for manufacturing, selling and distributing its products.

### *Manufacturing:*

Before a factory can manufacture, orders must first be placed thereon calling for the manufacture of certain saleable products. These usually emanate from the Sales Department as representing special orders, or from the Merchandise Department as representing standard products which are standard sellers of the company, and for which the demand is sufficient to necessitate keeping quantities in the warehouse available for orders as received from time to time.

On receipt of orders it is necessary for the Production Division of the Manufacturing Department to analyze the

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orders from the standard layouts, or special layouts in the case of special orders, so as to plan the manufacture of the products in the factory. It will then be found necessary to purchase raw materials from outside suppliers, and the necessary requisitions are issued authorizing the Purchasing Department to purchase the materials. These materials are eventually received by the factory and through the medium of the Accounting Department charged against the factory accounts.

### *Cost of Output:*

The cost of manufacturing the product called for by an order placed on the factory may be divided into three main divisions:

1. Material.
2. Labor.
3. Burden or Overhead.

For simplicity I am using the job order method of costing as I feel this can be more easily followed in a short paper of this kind.

### *Material:*

The Production Division issues a bill of material which gives the quantities and description of materials required for the manufacture of a particular order. The order number assigned is shown on this bill, and it is then forwarded to the Raw Material Stores as authority for the materials to be drawn by the various operating departments against the order number assigned.

Each department working on the order will then draw, on requisitions chargeable to the order number, the quantities of raw materials required by them for the operations to be performed. One copy of the requisition is retained by the Storekeeper, and the duplicate copy sent with the material. The Storekeeper forwards daily, or at other set periods, the requisitions covering materials issued, to the Cost Department, who weekly or monthly, price, extend and summarize the requisitions and ascertain the amount chargeable against each job number. The total of the material chargeable against each job is then posted to the job cost summary sheet. The requisitions are then filed according to job numbers. When the job is completed, the material used as shown on the Cost Summary is totalled, and the total value of the raw material used ascertained.

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### *Expense Materials:*

There are certain expense materials used which cannot be treated as direct charges against jobs, either through the fact that the value of the material involved is too small, or for other reasons. Material of this kind is charged against a standard expense order number for the department using such material, and is treated as an expense of the department concerned.

### *Labor:*

Labor charges may be divided into two divisions:—

1. Productive or Direct.
2. Non-Productive or Indirect.

### *Productive Labor:*

Productive labor represents labor charges which can be charged directly against a job order number.

Non-Productive labor represents labor charges which cannot be charged against a job order number, and consequently are charged against a standing expense order number chargeable to a department expense account or to a general factory expense account, which together with other non-productive or indirect expenses, are applied against the cost of the output of the factory on some uniform basis.

The Production Department, in addition to planning the materials to be used in the manufacture of orders, has also to plan the operations necessary for the manufacture of the product. Orders consequently are issued to each department which has to perform work on a job, specifying the operations to be performed, the machines necessary for the operations and the materials required. Time tickets are issued to the employees working on a job, the time of commencement and completion is shown and the nature of the operations performed. The tickets are then forwarded to the Pay Roll Department who check the hours worked on the various jobs by employees against the total of the number of hours worked as shown by the clock cards. The rates of employees are then shown on the work tickets and the monetary value of the time expended shown thereon. These work tickets are then either summarized in the Pay Roll Department by job numbers, showing the total chargeable for each department against each job, or the tickets are forwarded to the Cost Department for the performance of this



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work. The summary of the work tickets is then forwarded to the Cost Department, who post the amounts by departments chargeable to each job on the Cost Summary Sheet. When summarizing the amounts chargeable against each job, it is necessary to keep the charges divided as between departments, as different loading rates may apply to different departments. The work tickets are then filed by job numbers.

### *Non-Productive Labor:*

Standard order numbers are usually assigned for different expense operations, i.e., operations on which the time spent on each individual job is so small that it is impossible to assign time to particular jobs. In addition, standard expense order numbers are assigned for Janitor service, elevator service, clerical help, Foreman, etc.

Usually in non-productive labor, the employees are working on the same operation for a whole week, and consequently only one work ticket is necessary. Such work tickets, of course, are turned over to the Pay Roll Department for checking against the clock cards, and are rated and extended. The tickets are summarized against the expense order numbers by departments and are then turned over to the Cost Department to charge the respective expense accounts of the various departments.

### *Burden or Overhead:*

The expenses of operating the factory which cannot be applied directly against job orders may be divided into two divisions:—

1. Fixed.
2. Variable.

### *Fixed Expenses:*

Fixed expenses cover those charges which do not vary, whether the factory is operating at full capacity or not, such as rent, depreciation, insurance, taxes, etc. These expenses are charged against departments on some suitable basis, such as floor area for rent, standard rates applied on the value of the machinery in use in the departments for depreciation, etc. These expenses usually vary very little from month to month and can be charged to departmental expense accounts on standard monthly journal entries.

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### *Variable Expenses:*

Variable expenses cover such charges as expense labor, expense supplies, etc., which vary according to the capacity at which the factory is running, and consequently bears some relation to the output of the factory from time to time, and as a result require careful study from week to week.

As outlined previously, non-productive labor is charged against departments by a system of standard expense orders. Expense supplies are charged against the expense accounts of the various departments in a similar manner.

### *Loading Rates:*

There are several ways in which overhead or burden expenses can be applied against the cost of products, but for simplicity the method of productive labor is being used. Naturally the best method to use depends entirely on the nature of the business.

By the productive labor method is meant the establishing of certain loading rates to be applied to the direct labor charges of a department which will be sufficient to take care of the expenses of the department.

There are two methods of applying loading rates:—

1. Rates set at the end of each month to take care of the total expenses of each department.
2. Standard rates set for each department which remain in force for the fiscal year.

The first method can only be used in small companies, and naturally causes considerable delay and inconvenience as the rates to be applied cannot be ascertained, until the expenses of each department are known at the end of the month.

The standard rate method is generally accepted as the correct method of handling overhead loading. This method, of course, means that the departments from month to month will show a surplus or deficit as between the accumulated expenses and the accumulated loadings at standard rates.

Standard rates are obtained by ascertaining a normal output for each department for the fiscal year, which is usually based, say, on 80 or 90 per cent. of the capacity of the department, as it is found from practical experience that no department can operate at actual capacity. The expenses of the department for the normal output is estimated, together with the productive labor for such output

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and the ratio of the estimated expenses to the productive labor obtained, which is then set as a standard loading rate for the department.

Where standard rates are established the surplus or deficit as between the accumulated loadings and actual expenses represents a saving in cost in the first case, obtained through the operating of the factory beyond the normal capacity probably through excessive orders necessitating overtime, and in the second case a loss caused by the factory having to run below normal capacity. The surplus or deficit between loadings by standard rates and the actual expenses should be transferred to cost of sales account at the end of each month as a credit or debit as the case may be.

It is understood, of course, that there are certain expenses of a factory, such as administration expenses, etc., which cannot be charged against operating departments, but are charged against non-operating departments and then spread over the various operating departments on some uniform basis.

### *Completed Orders:*

The summary cost sheet of a job order when completed shows material used as posted from the summaries of the material requisition slips, and the productive labor by departments as posted from the summary sheets of productive labor charges. The final cost of the order is then obtained by applying the loading rates of each department against the productive labor of each department. The total charges for material, labor and loading are then totalled and the total cost of the job obtained, which is then worked out to a unit cost as required.

### *Deliveries:*

As the manufacture is completed the products are turned over to the Merchandise Department. The Merchandise Department account is charged and the work in process, or some other factory account, credited. In some cases, of course, it is necessary for the factory to make partial deliveries on an order before the actual cost is obtainable. In such cases, in order to take care of the transfer, an estimated cost must be used for the partial deliveries as a charge against the Merchandise Department account. In such cases the necessary notes are shown on the Cost Summary Sheet and when the job is completed adjust-

## COST AND MANAGEMENT

ment is made as between the actual cost of the order and the amounts charged to the Merchandise Department. This adjustment may, in most cases, safely be charged direct to cost of sales account instead of against the Merchandise Department account, as usually it will be found that the material covered by the adjustment has already been sold.

### *Selling and Distributing—Selling:*

Orders are usually obtained by the Sales Department through the medium of outside salesmen who call on customers from time to time, from whom they obtain orders which they forward to the Sales Office for filling. As the orders are received by the Sales Department they are edited and priced, and in the case of standard products the necessary shipping papers are turned over to the Merchandise or Stores Department so that the material may be shipped from stock. In the case of special orders covering material which is not carried in stock, the orders are placed on the factory for special manufacture.

In addition, of course, to outside salesmen, it is usual for a company to use some method of advertising. Any moneys expended in this manner are treated as advertising expenses chargeable against the Sales Department.

In order to be sure that the customer will receive service it is usual for a copy of the order to be retained in the files of the Sales Department for service purposes until such time as the order is completed, it being the duty of the Sales Department to see that the material is shipped out according to promises made to customers, and if not shipped out accordingly, investigation is made to ascertain the cause of the delay; the order is then followed until shipment is actually made.

So that there will be some assurance that every order received is either billed out or cancelled on proper authority, a system of assigning numbers numerically to each order as received should be used, and suitable information entered in the order register. As each order is billed or cancelled it should be marked off in the register, and the old outstanding open orders should be investigated from time to time so as to be sure that no material has been shipped out without being billed to the customer.

In order to accumulate the expenses of the Sales Department, department numbers should be assigned to the

## SYNOPSIS OF OPERATIONS OF A MANUFACTURING COMPANY

main departments of the Sales Department, and sub-classification numbers assigned for the main division of expense and a general ledger account number assigned for the control of the expenses. When classifying the expenses, the general ledger account number should be shown first, followed by the expense sub-classification and the number of the Department incurring the expense. These expenses are then accumulated against the expense accounts by the Accounting Department so that statements can be prepared each month.

### *Distributing:*

The Merchandise Department is responsible for the storing of finished products until they are shipped to customers. In order to control the investment and to give service to customers, it is customary for the Merchandise Department to keep a stock maintenance card for each kind of material carried, showing the maximum and minimum quantities to be carried, the quantity on hand, etc. Employees responsible for these cards should bring to the attention of the Merchandise Manager any materials which are approaching the minimum quantity so that the Merchandise Manager may place new orders if considered advisable. In addition, any materials which may become inactive should immediately be brought to the attention of the Merchandise Manager so that he may review the situation and decide what steps are to be taken.

When shipping instructions are received from the Sales Department, shipping papers are immediately turned over to the Stock Maintenance Department who disburse the quantities to be shipped from the cards, and mark on the shipping papers those items which are not in stock and see that a back-order is made out to cover shipment of the material when received in stock. The shipping tickets are then released to the selectors who select the stock and turn the material, together with the shipping tickets, over to the Shipping Department for shipment. The tickets are then released to the Billing Department so that the customer may be billed.

In a Merchandise Department it is essential that the following factors be carefully watched:

1. Service and Shipping.
2. Inactive Stocks and Over Stocks.
3. Investment.

## COST AND MANAGEMENT

The classifying of Merchandise Department expenses should be handled in the same manner as outlined for the Sales Department.

### *Administration:*

Administration may be divided into three departments:

1. Executive.
2. Secretary-Treasurer.
3. Comptroller.

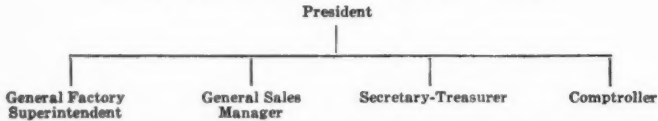
### *Executive:*

The Executive Department consists of the President or General Manager and his staff.

So that as much detail as possible can be avoided it is usual for the President of a company to have as few department heads as possible reporting to him. The department heads so reporting usually consist of the General Superintendent of the Factory, General Sales Manager (to whom as a rule the Merchandise Manager reports), Secretary-Treasurer and Comptroller. (See Exhibit A "Executive Organization Chart.")

### Exhibit "A"

#### EXECUTIVE ORGANIZATION CHART



By lining up his organization in this way, the President will find that the worries of detail are entirely removed and that he may devote practically all his time to the management end of the business. The main functions of the President are to decide the policy of the Company, to see that it is carried out and that all departments are working smoothly together so that the best results may be obtained for the company as a whole.

### *Secretary-Treasurer:*

This department is responsible for the payment of all accounts as authorized by the Comptroller's Department, and is responsible for all legal matters with regard to the operation of the Company. It is usual for this Department to

## SYNOPSIS OF OPERATIONS OF A MANUFACTURING COMPANY

be responsible for the authorization of customers' credits and the collection of customers' accounts.

### *Comptroller:*

The Comptroller is responsible for the accounting records and statistics of the Company, the approving of all payments, and the routines and methods used throughout the Company.

### *Billing:*

As shipping tickets are received from the Shipping Department they are extended and totalled and the necessary invoices made out and forwarded to the customers. Copies of the invoices are summarized daily and turned over to the Bookkeeping Department so that they may be posted to the respective customers' accounts in the Accounts Receivable Ledger.

In order to obtain the Cost of Sales each month it is necessary for the Billing Department, or some other department, to cost the items billed to customers so that the Cost of Sales for each month may be summarized to enable the Bookkeeping Department to credit the Merchandise Department Account and charge Cost of Sales Account for the value of material billed during each month. In some companies only a certain percentage of the sales are costed and gross profit rates obtained therefrom by classes of material, which are then applied to the sales for the month and the estimated gross profits obtained, after which the estimated cost of sales can be ascertained.

### *Accounts Payable:*

It is the duty of the Accounts Payable Department to see that invoices from suppliers are properly approved, after which they are vouchered for payment according to due dates. The vouchers are then entered in the distribution book from which the various accounts are charged according to the classification of the invoices, after which the vouchers are audited, the cheques removed from the vouchers and recapped and turned over to the Treasurer's Department for payment.

### *Bookkeeping:*

The Bookkeeping Department is responsible for the General Ledger, Accounts Receivable Ledgers, and other

# COST AND MANAGEMENT

## Exhibit "B"

### ANALYSIS OF TOTAL COST

Total Cost	Factory Cost	Prime Cost	Direct Material	
			Direct Labor	
			Expense Material	Material which cannot be applied in a direct matter Supplies Scrap Material Small Tools and Dies
			Non-productive or Indirect Labor	Indirect or Non-Productive Labor Supervision or Foremanship Superintendence Inspection Factory Clerks' Salaries Defective Work Experimental Work
	*Overhead Expenses			Rent Insurance—Fire and Liability Taxes Depreciation Maintenance, Repairs and Renewals Power Light Heat Freight and Cartage Inward (when not considered as part of direct material charge). Miscellaneous Factory Expenses
			Indirect Expenses	
	Selling and Distributing Expenses			Salaries Commissions Advertising Sample Expense Entertainment Travelling Expenses Rent Telephone and Telegraph Printing and Stationery Postage Miscellaneous Expenses Freight and Cartage Outward (when not charged against Sales Account)
	Administrative Expenses			Salaries Auditing Expenses Legal Expenses Rent Telephone and Telegraph Printing and Stationery Postage Miscellaneous Expenses

Total Cost + Profit = Selling Price.

\*Generally covered by Standard Loading Rates.



## SYNOPSIS OF OPERATIONS OF A MANUFACTURING COMPANY

accounting records of the company. The General Ledger is the controlling record of all the assets and liabilities of the company, and it is from this Ledger and subsidiary records that the monthly reports of the company are prepared.

### *General:*

The expenses of the Administrative Departments are classified in a similar manner to those of the Sales Department.

The Comptroller is responsible for issuing complete instructions for the taking of physical inventories at stated periods, and for adjusting the final results of these inventories with the book records through the Cost of Sales Account. It is the duty of the Comptroller to see that sufficient reserves are provided for depreciation of inventories, fixed assets and accounts receivable.

The Comptroller is responsible for the preparation of reports and statistics for the President and Directors showing the results of the company's operations for each month, and in addition at the end of each year is responsible for the preparation of the annual balance sheet and profit and loss statement showing the results of the company's operations for the fiscal period.

Briefly the results of a company's operations for the fiscal period are obtained as follows:—

Sales .....	\$
Less Cost of Sales .....	\$
Gross Profits .....	\$
Deduct: Selling & Distributing Expenses .....	\$
Administrative Expenses .....	\$
Total Expenses .....	\$
Balance of profits available for Interest, Income Tax, Dividends & Surplus .....	\$

The chart on "Analysis of Total Cost" shown on Exhibit "B," illustrates the many factors which enter into the total cost which has to be considered when establishing selling prices.

## The Operation of a Modern Cost System

By L. RHODES

*Consolidated Lithographing and Manufacturing Company,  
Ltd., Montreal*

(An address before the Montreal Chapter, January 28)

### PART III

**I**N presenting to you my concluding paper of the series dealing with the operation of a modern Cost System, I come to the point where it is necessary for me to dwell on the importance and imperative need of keeping records.

You will remember that in my previous articles I dealt first of all with the primary elements of cost, outlining and describing the means and methods employed by the company I am associated with in the ascertaining, application and distribution of those elements of costs to the various centres concerned. I then proceeded to give a description of the methods we adopted to secure and collect information as represented and entailed by the processes of manufacture whereby we provided a basis on which to formulate an intelligent summary of the expenses incurred during the process of converting the raw stock into the finished article. I also explained the method used in securing and recording the details as shown on the Time Tickets, to the various routine forms, and how the whole of the information thus collected was segregated, and finally recorded on the Summary of Departmental Costs. The use of figures and data as set forth on this latter Summary will be the main subject of my paper to-night. As I have said before, my opinion is that the information as recorded on the Time Ticket forms the basis and foundation on which a Cost System is built, and just as this is the foundation, so is the Summary of Departmental Costs the keystone by which the whole of the Costing structure is held together.

We must continually bear uppermost in our minds, that although a Cost System is primarily intended to reflect the application and distribution of Costs to the various Cost centres; it has also to serve various other functions of a very important nature.

## OPERATION OF A MODERN COST SYSTEM

To use the data thus gathered for Costing purposes alone is to make a partial and very incomplete use of it.

To be of any practical value and assistance to a business, this fund of information needs to be converted into some permanent system of records, some kind of system whereby the salient features of the major items of cost can be recorded, which will eventually be of great usefulness to the management.

Sufficient statistical data can be compiled to enable the executives to exercise a reasonable and efficient control of a business without resorting to the employment of any additional clerical help, for it is a fact that the over elaboration of a Cost System in no wise improves its efficiency; in most cases it seems to have quite the opposite effect.

The essence of good Cost Accounting, in my opinion, is to be able to regulate and supply any reports and statistical data in as simple form as possible, at the time that it is required by the executives and those who utilize and rely on this particular information for their future policy of management.

The exhibits of the forms you have in front of you are similar to those we use in our line of business. I do not claim that they are in any way perfect in their capacity to show at a glance all the numerous and varied expenses which are transacted by our line of business. It is not intended that they should do so.

In exhibit A\* you see a form which is made out for each productive operation—both handwork and machine work. This form I may say is a modification of the one advocated for the use of printers by the United Typothetae of America.

You will notice this shows by months the cost of each major item of expense incurred by each department and operation per chargeable hour, for the current month and also the current twelve months.

First of all we have the item Wages. We all know that wages constitute the largest single item of manufacturing expense and that it is an advantage to know what amount of wages is being paid for any particular process of manufacture. When we begin to compare the amount of wages paid, against the production shown for any corresponding

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\*Space does not permit of the reproduction of the forms to which Mr. Rhodes referred.

## COST AND MANAGEMENT

month, and we find that they are either far above or below the average required for that particular kind of work, we are enabled to determine whether the efficiency of the workman is up to the standard for our requirements, or, possibly, we may find that some individual has failed in the planning of the work or the working out of his plan. In any case we are apprised of the fact that something is wrong somewhere, and it entirely rests with us to supply a remedy which will prevent a repetition of any discrepancies, failing of plans or whatever the fault might prove to be. The remainder of the columns shown on this form are to a certain degree self-explanatory—the column “Factory Cost” containing the total of fixed charges, wages, power, light and supplies which have been apportioned and incurred by each individual operation for each month, or current twelve months. The column designated “Total Factory Cost” includes the charges contained in the last mentioned column, plus each operation’s share of Commercial Expense.

I do not consider it necessary to enumerate and explain the remainder of the items shown on this form, as the headings clearly indicate the uses for which they are intended.

A regular study of the data as contained in this record from month to month, gives a Cost Accountant ample scope whereby he can use his knowledge and experience in reducing many hidden and undesirable items of cost. Speaking from my own experience, I find the use of this form acts as a kind of barometer whereby the efficiency of any department or operation can be ascertained, and in this connection also can be determined whether the cost of any particular operation warrants the purchase of more modern machinery, or whether it would be more profitable to scrap a piece of machinery and get that particular process of production done outside by some firm which specialized in that branch.

The next form—the functions of which I will make an attempt to describe—is that of exhibit “B.” This form, although dissimilar to the previous one described, serves an equally important purpose. As I have explained in one of my previous papers, we in the lithographing industry, as in most industries, must recover our hour costs through sales and for the purpose of costing we use the Standard Hour Cost, which, although not the *actual* hour

## OPERATION OF A MODERN COST SYSTEM

cost, is, however, a fair cost based on an average cost for a reasonable period covering varying conditions of production. The idea behind this form is to ascertain whether each machine or operation is recovering through the Standard Hour Rate the actual expenses incurred during the process of manufacture from month to month, and to a great extent the Standard Hour Rate is governed by the results as indicated and shown thereon.

You will notice that a column is provided for the actual *chargeable* hours expended on production by a certain machine or operation, also that the total all-inclusive cost is recorded in a column provided for it. The total *chargeable* hours when divided into the total all-inclusive or *actual* cost, gives the all-inclusive cost per chargeable hour for each month. This is in turn compared with the Standard Hour Rate and we can see at a glance the variation between the actual total cost per month and the amount we have charged into jobs at the Standard Rate. At certain periods we take the results as indicated on each form and decide whether or not the Standard Rate requires adjusting, also at the end of a twelve months' period we can tell just how we stand regarding the variations of the actual costs as against those charged into jobs through the Standard Rate.

The difficulty I find in giving a paper of this description is that it is almost impossible to illustrate in a graphic manner the most essential parts requisite for a clear conception and understanding of the actual *workings* of a system. The reason is obvious of course—and therefore a very careful choice of data is necessary to enable one to proceed with a reasonable amount of continuity, and even then, quite a lot has to be left to the imagination of those interested.

Before proceeding to describe the merits of the next form I would like to make a few preliminary remarks which will justify the necessity for its compiling and upkeep.

I suppose we are all agreed that Accounting—I don't refer to Cost Accounting now—is purely a method whereby business transactions are collected and recorded, and naturally concerns itself with matters and facts relative to the financial operations and aspects of a business. And I suppose we all concur in the opinion, that during the past few years the intricacies and requirements of all branches of industry have developed to such an unprecedented degree,

## COST AND MANAGEMENT

that we have to admit that to-day, more than a mere recording and compiling of business transactions is required if an industry is to make any progress. Merely to look up the account of Dombey & Son and discover that we sold them \$10,000.00 worth of goods during the past year, conveys little or nothing as to whether those goods were sold at a profit or a loss.

I will admit that it is absolutely essential to have financial facts recorded in a systematic and orderly manner, but something more is needed, something which will show the significance of those facts, something that will bring to light and indicate the direction in which the business is heading.

We may rejoice in the fact that our sales this year are far in excess of those for the corresponding period of last year, but had we some means of analysing these bold figures we might find that our actual profits prove to be less. On the other hand, we may bewail the fact that the sales this year are below those for the corresponding period of last year, and yet if we only knew it our profits may be actually higher. Therefore it is quite obvious, that if the executives of a business desire to know why such fluctuations take place, it is not only necessary to record the amount of sales for each customer, but it is also necessary to register the Profit or Loss on each order as it is completed and shipped. In some industries when a job is completed and delivered, the customer is charged in the usual manner with the sales price of the order. Then possibly, at the end of the month, the total of all similar sales is obtained, and it may be that the total sales of that particular month are compared with the previous month's sales, and after the comparison has been made the enlightened one gleans the information that the sales for one month are higher than those of the previous month—that is all the information he gets—nothing more, nothing less. The figures do not convey one iota of information as to what profit was made. The whole of the transactions may have been nothing more or less than a mere exchange of dollars, in so far as the books of account indicate.

In return for the dollar that a lithographer spends in carrying on business, he receives a certain amount of paper, ink and materials to which he adds a proportion of the expenses of sales effort, management and production skill, in

## OPERATION OF A MODERN COST SYSTEM

addition to which are added a portion of the expenses incurred by the hazards of doing business. It is only reasonable then to expect that the original dollar spent on raw materials together with the added amount necessary to convert those raw materials into a saleable article should be recovered through the selling price, plus a margin for profit.

It was said at our last meeting that costs do not in any way determine or govern the selling price of an order. This may be true to a certain extent, but although costs perhaps do not actually determine the price for which an order is to be sold they are, however, instrumental in showing us where losses end and profits begin, and eventually an adjustment of selling prices becomes necessary, because no matter how charitably inclined the sales manager of a concern might be, he knows that he cannot continue to sell an article at ninety cents which he is well aware costs \$1.00 to produce and expect to stay in business.

Now we come to the description of Form "C." In our business a record is kept of all the raw stock, ink, materials and labor entailed by every individual job which passes through the plant—I explained the routine at a previous meeting—and the total cost, selling price, profit or loss shown on these individual records are in turn recorded on a form similar to the one in front of you. We term it the "Sales Register." A Sales Register is made out for each customer and we can tell from month to month not only the amount of goods that have been sold to him, but also the profit or loss we have made on each order.

You will notice that provision is made for the job number under which the order was produced, description of job, selling price and the profit or loss. You will also observe that a place is provided for the initials of the traveller responsible for the customer's order. The make-up of the form is simplicity itself. No doubt many of you will already have grasped a few of the diversified uses to which the information as shown on this Sales Register can be applied. This form was primarily intended as a means of ascertaining the profit or loss on any particular customer's order, but we have gradually developed its use, where we can apply the data gained to many other useful purposes. We can tell what particular type of job is most profitable for us to produce, and, if we so desired, we could acquaint our representatives prior to interviewing a certain



## COST AND MANAGEMENT

kind of customer, of the desirability of bringing the type of order which is preferable and profitable to our own sphere of production, for it must be borne in mind, that there is a class of individual who makes a practise of saving up his small and unprofitable jobs, and pawns them off at the first opportunity to the next traveller who happens to turn up, just as an excuse to get rid of him, and will then turn round and place his worthwhile orders into the hands of an old friend of the family.

By making a recapitulation of all the sales and results of sales as continued in these Sales Registers at the end of a period, we can determine which of the travellers are bringing good business to the company. The results show whether a traveller is actually selling or on the other hand merely taking orders.

Had we taken the figures shown in the Account Receivable ledger as a criterion by which to determine the capabilities of the selling force, I have no hesitation in saying that the fellow who had the largest *amount* of sales to his credit would be given the distinction of being the most efficient representative, but with the results as shown in the Sales Register, this might easily prove to be otherwise and would eventually perhaps necessitate revising the policy of paying commission on sales to one of basing commission on profit. I do not want to convey the impression that the traveller who continually brings in orders that do not show actual profits should be dispensed with. There are periods when his services are of real value, and, perhaps, it would not be amiss to illustrate *why* he is of real value. For a business to pay strict attention to the policy of refusing orders which do not cover the entire cost of material, labor and overhead strikes me as being somewhat indiscreet. In my opinion it would appear profitable during those periods of depression when business is poor, to accept those orders which would pay for the cost of raw material, labor and only a *portion* of overhead, for the simple reason that certain items of overhead go on day by day irrespective of whether the plant is in operation or not. Simply because the factory closes down for a few days, we don't find that the landlord refuses to accept his rent, neither does the tax collector fail to extort his pound of flesh, nor do we find that Father Time compensates us for the few days that have drawn nearer to the day when part of the machinery has become obsolete.



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So obviously it is policy at certain periods to accept orders which, although not profitable in themselves, would be a means of absorbing a portion of the overhead that otherwise would be a total loss owing to the absence of production to carry it.

The foregoing are my reasons for saying that the traveller who is not successful in continually bringing profits proves useful at certain periods. One other use to be gained by the employment of this Sales Register, is that one is enabled to make a quick reference to any particular type of job should the necessity arise that an urgent estimate is required for a similar order, the kind of job being shown in the "Description" column indicates at a glance the Job Number under which the order was run.

This I think completes my series of papers as far as describing the operation of a Cost System goes. I am aware that many liberties have been taken in meandering at intervals from the main subject, but those observations were made with a purpose of breaking the monotony of a mere description of routine forms and paraphernalia.

There is just one other item I would like to dwell on for a few moments before I close, an item which, although not actually concerned with the operation side of costing, has, however, a very important bearing on it. This is the item known as Selling Expense, a subject which recently seems to be receiving quite a lot of attention, and appears to be falling into the same category as that of Interest on Investment in so far as the arguments both for and against its inclusion in costs are concerned. Several excellent articles have been published recently, dealing exhaustively with the various views held by Cost Accountants on the methods by which this expense should be treated. Some of the articles stress in no uncertain terms that the only correct way of dealing with Selling Expense, is to charge it as a loading charge on to the Cost of completed work. One writer expresses the opinion that weight should be the basis of distribution. Another has a propensity to base this charge on the measurement of the finished article, whilst other writers incline to the belief, and are equally emphatic in saying, that the expense of Selling to be equitably distributed ought to be included in Costs.

Strange to say, the whole of the opinions quoted emanate from the minds of men who are concerned with the

## COST AND MANAGEMENT

manufacture of castings. It seems almost unbelievable that so many distinct variations of opinion could be found to exist amongst a class of people who manufacture the same kind of product.

However, Selling Expense differs according to the nature of the business. Speaking from the lithographing point of view, I do not consider that we could fairly charge Selling Expense in any terms of percentage to the Cost of the completed job. By no means could we charge it on weight or measurement—some lithographers do charge it on weight I know, but I've never been able to hear of a convincing argument why it should be so charged—nor could we with any degree of fairness charge it on a fixed percentage of the *value* of finished goods, without discriminating to the disadvantage of the higher priced article every time.

Had we to pursue the latter course, we would undoubtedly be charging and applying the same rate of expense to an order that only took an hour to secure that we would charge on to one that entailed the purchase of railroad tickets plus a few days' hotel expenses.

There is another aspect by which we can observe this matter, and I believe this is the standpoint which decides the method we adopt in our plant. To be able to understand our viewpoint, it is necessary to make a comparison with some industry which differs in its method and policy of production from ours.

We will take an industry which has for its product a commodity for which there is always a steady demand. This concern can steadily manufacture to stock and any Selling Expenses which may be incurred are paid *after* the goods are manufactured. Now take our case, we as a jobbing industry absolutely rely on receiving an order before we can turn a wheel on production, before an order ever enters the factory all the Selling expenses incurred have been paid for, and it is only reasonable to assume that these expenses are somewhat allied to money which has to be expended on raw stock and materials before we can begin work on producing the job.

While Selling Expense cannot be correctly considered a cost of manufacture, it is, however, in our case, an item of expense that must be paid before we can secure the privilege of running the job through our plant, and I believe

## OPERATION OF A MODERN COST SYSTEM

that the only logical way to charge it in our branch of industry is through costs.

During the course of this series of papers I have tried to elucidate as clearly as possible the methods we adopt in our plant to ascertain what really constitutes a dollar's worth.

With one solitary exception which I made for the purpose of making a comparison, I have carefully avoided dwelling on the accounting side of our plant.

The whole article has been merely an effort to illustrate a few of the phases with which a junior Cost Accountant should be acquainted.

### THE TRUE OBJECT OF STUDY

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THE N.A.S.E. is emphasizing the importance of education among its members and has elaborate plans for recognizing accomplishment.

All of this is good. No man knows all there is to know about his own job, to say nothing of the work of his official superior whose job he aspires to fill, and of his companions whose work he hopes to supervise.

But, after all, why study? Why spend the evening over a dry book, when the movies are open and the air is full of radio delights?

A common reply, especially by those who have home study courses and books to sell, is that the object is to secure a better job, to win promotion, to earn more money. Well, these *may* follow diligent study—they never will come to most men without it—but we must remember that they do not necessarily follow. One cannot secure a better job if there is no such job open. Promotion must wait upon the vacancy of the job ahead. More money can be paid only for more value, and it must be recognized that, for most jobs, there is a limit beyond which it is impossible to go.

No—material advancement is the wrong motive for study. It peters out too soon. Many a man has worked hard for two or three seasons, only to stop altogether in bitter disappointment. The trouble is not with education or with conditions—the ideal is at fault.

The real reason why one should study his work is an ideal which will last for life—the ideal of making one's self a better man to-morrow than one was yesterday, to understand a little better the things one sees day by day, to do one's work ever more effectively. Not for a better job or more money, although those will come as opportunity affords; not for the vain-glorious domination of one's fellows; but for simple personal self respect. To be a better man day by day, a little more helpful to the other fellow, a more intelligent assistant to the chief, a more honorable example of an engineer—that is the real reason for study.—*Power.*

## FACTORS IN INDUSTRIAL EFFICIENCY

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**T**HIS is the subject matter of the third volume of the report of the Balfour Committee on Industry and Trade. The first two volumes consisted of surveys of the factors affecting the competitive powers of British trade which operate in overseas markets and the relationships between the different classes engaged in production. The third volume is occupied with an examination of such of the factors in industrial and commercial efficiency and competitive powers as seemed most suitable to be dealt with as a whole, dealing with (1) factors affecting industrial structure; (2) factors affecting quality of production; (3) factors arising from the relation of the State and public authorities to industry and trade, and (4) certain aspects of the questions of industrial profits, burdens and costs. It is a volume of over 500 pages and contains a vast amount of interesting and valuable information on trade and industry and of the various factors making for efficiency.

The report rightly stresses the fact that it is "a matter of supreme necessity in this period of rapid and insistent flux and transformation to maintain the qualities of initiative and flexibility of temperament, the power of readjustment and adaptation, and the capacity for free and willing co-operation among all the parties in production and distribution," and justly claims that there is no need for pessimism if the situation is faced with courage and an open mind. The report concludes on the high note that it cannot be doubted that in British industry "there lies latent a great power of energetic co-operation and response to changing conditions. But it needs the exercise of the highest qualities of imaginative leadership and of loyal goodwill to evoke and mobilize this reserve power and direct it to the common benefit." The same high note was struck by the Prince of Wales in his speech in connection with the opening of the British Industries Fair when he emphasized the need of "enterprise, enthusiasm, and imagination."—*Lloyds' Bank Monthly*.

## CHAPTER NOTES

### MONTREAL

The Montreal Chapter was most agreeably surprised at the interesting paper given by Mr. O. Lefebvre of the Quebec Streams Commission, on March 11th. This paper described in detail the power developments in Quebec and the method used by the Provincial Government in improving sites and leasing. Mr. Lefebvre gave us some "Water Geography" and succeeded in enlightening the members on the immense possibilities in developing power. We learned that the Gouin Dam on the St. Maurice equalled the Assouan Dam in Egypt, that it had a reservoir of 160 billion gallons, that by proper damming the Commission were able to double the natural low water flow; also, that all this cost  $2\frac{1}{2}$  million dollars and produced a revenue of \$234,000.00 per annum.

We were given similar statistics on four other such developments in the Province in addition to following out the Construction Estimates on a similar job now in progress. These estimates concerned every phase of the work, the problem being to build a control dam of concrete, two dykes of concrete and several other dykes, earth or rock fill.

In following this estimate we were glad to notice that besides a profit, the builders looked for "interest on investment." An odd remark or so was heard concerning this, which seemed to be favorable. The illustration presented us with a unique transportation of materials problem, (being unable to use the river and being several miles from the railway). "We boarded 600 men, each with a 300 cubic foot air allowance, building a camp costing \$30,000.00." We are hoping to secure Mr. Lefebvre's paper for the Magazine and will not go into too descriptive detail.

Mr. L. Rhodes of the Consolidated Lithographing & Manufacturing Company, completed his series at this meeting. This paper dealt with the final job analysis, the illustration being "beautiful to behold." He can tell the salesman from the order taker with the cost analysis. This section 3 of his series will appear in the Magazine and you are invited to communicate with Mr. Rhodes, who has most

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decided views on Costs, with reasons. We had the pleasure of a visit from a Toronto member at this meeting.

### TORONTO

Through a change in our program arrangements, the meeting of the Toronto Chapter scheduled for March 9 was cancelled. On March 23 we had the long-delayed address by J. E. Carruthers, export manager of Durant Motors of Canada, Ltd., Leaside, on "The Operation of a Standard Cost System." Mr. Carruthers was already well known to the chapter as a good speaker, and his address fully compensated for the delay. A show of hands brought forth the fact that only two of those present were actually using standard costs, but it was evident during the address, and from the discussion which followed, that Mr. Carruthers had done much towards converting the members to his system. There was a general feeling that the apparent intricacy of standard costs would prevent their adoption by executives, but Mr. Carruthers demonstrated that in actual operation the method is both simple and adaptable, and supplies results of unquestionable value. The meeting was well attended.

Another meeting of the Chapter is planned for April 6, when the address of R. J. Dilworth, F.C.A., is to be given. This will complete the regular meetings of the chapter, and will be followed by the annual meeting and dinner on April 20.

## POSITIONS DESIRED

- No. 263**—Age 45. Twenty-nine years' experience General Accounting and Cost Accounting. At present Cost and Production Manager for one of Canada's largest industries. Desires responsible position as Secretary, Treasurer, or Accountant in Toronto. Alexander Hamilton Institute student. Best references.
- No. 264**—By young man, age 23, single, Canadian, position as junior cost accountant. Three years' experience costing with box manufacturers, also three years in general office. Willing to leave town.

# The Canadian Society of Cost Accountants

## APPLICATION FOR MEMBERSHIP

Name in full ..... Age .....

Address in full .....

Firm with whom engaged .....

Firm's address in full .....

Firm's Business ..... Position held .....

Names and addresses of two references: .....

(If applicant is a Member of any Accounting Institute or Society incorporated under the authority of any Provincial Legislature, it will be sufficient to give the name and address of the Secretary of such Institute or Society.)

To R. S. Smith, Hon. Secy., 77 Commissioner Street, Toronto.

I hereby apply to be admitted a Member of The Canadian Society of Cost Accountants and undertake if admitted to observe all the By-laws and Regulations of the Society for the time being in force.

I enclose herewith ..... Dollars, being my Membership fee to the end of the current half year, which is to be returned to me if this application is not accepted. year

SIGNATURE OF APPLICANT .....

DATE .....



